



## MEMORANDUM

April 9, 2013

**TO:** Donald R. Schwer III, Enforcement Officer/Agricultural Engineer  
U.S. EPA - Water Enforcement and Compliance Assurance Branch

**FROM:** Town of Griffith, Indiana

**RE:** Alternatives Analysis Amendment – Sanitary Sewer Overflows (SSO's)  
Order for Compliance – Docket No. V-W-12-AO-08

This Memorandum will summarize the revisions made to the original Alternatives Analysis prepared by the Town of Griffith dated August 14, 2012. The purpose of the Alternatives Analysis is to review options that the Town has to eliminate SSO's from the Cline Avenue Equalization Basin, to the best extent practicable. The alternatives reviewed are essentially the same as in the original submittal; however, we have gathered more detailed information on the options pertaining to sending more flow to the Hammond Sanitary District (HSD).

### ALTERNATIVES REVIEW

The following alternatives have been reviewed:

- Inflow/Infiltration (I/I) Reduction
- Expansion of the Existing Equalization Basin
- Increase Contract Capacity with the Hammond Sanitary District (HSD)
- Combination of Pumping More Flow to HSD and Expansion of the Basin
- Construction of a Wastewater Treatment Plant

#### A. INFLOW/INFILTRATION REDUCTION

As stated in the original Alternatives Analysis, the Town has made progress over the last several years in eliminating inflow and infiltration from their sanitary sewer system but the flows at the Cline Avenue Pump Station still increase significantly during major rain events. The reduction of inflow/infiltration will continue to be a top priority for the Town of Griffith, yet history indicates that this will not resolve the SSO issue on its own and that a definite amount of flow to be removed by I/I reduction measures cannot be determined.

#### B. EXPANSION OF THE EXISTING EQUALIZATION BASIN

The Town has had seventeen (17) bypass pumping events since the pump station and equalization basin was put in service in October of 1997. From the rainfall data in Table 1 it can be seen that there were several extreme rain events during this time period. Although the Town intends to do everything it can to prevent all SSO's, there will certainly be rain/weather events in the future that may result in exceeding the storage capacity of an equalization basin expansion or other project that could reasonably be undertaken by the Town.



**TABLE 1**  
**Town of Griffith**  
**Events Requiring Bypass Pumping**

NO.	DATE	IDEM INCIDENT NO.	QUANTITY PUMPED TO SWAMP	DATE OF LETTER TO EPA/IDEM	PUMPING TO SWAMP			RAINFALL	GROUND ALREADY SATURATED
1	6/25/00		4.3 MG	6/30/00	2:20 P.M. 6/25/00	to	2:00 P.M. 6/26/00	(5.3" - 6/20 to 6/24)	Yes
2	5/12/02	2002-05-163	8.2 MG	5/16/02	1:30 P.M. 5/12/02	to	1:00 P.M. 5/14/02	(5.4" - 5/5 to 5/13)	Yes
3	1/13/05		5.6 MG	1/18/05	6:00 P.M. 1/13/05	to	6:00 P.M. 1/14/05	4.2" Rain 10.5" Snow 1/1 to 1/13	Yes
4	4/17/06		3.5 MG	4/21/06	8:00 P.M. 4/17/06	to	10:00 A.M. 4/18/06	(4.5" - 4/16)	No
5	9/14/06	2006-09-113	9.0 MG	9/19/06	11:30 P.M. 9/13/06	to	3:00 P.M. 9/16/06	(9.3" - 9/10 to 9/13) (7.2" - 9/13)	Yes
6	8/20/07	2007-08-182	21.9 MG	8/30/07	4:45 P.M. 8/20/07	to	2:00 P.M. 8/27/07	(14.2" - 8/4 to 8/25) (11.9" - 8/14 to 8/25) (3.3" - 8/19)	Yes
7	1/08/08	2008-01-065	5.1 MG	1/11/08	4:00 P.M. 1/08/08	to	1:00 P.M. 1/09/08	On Snow Covered/ Frozen Ground	-----
8	8/05/08		1.4 MG	8/08/08	6:00 A.M. 8/05/08	to	11:30 A.M. 8/05/08	(4" - 8/4) HSD Power Outage	-----
9	9/13/08	2008-09-101	59.4 MG	9/18/08 10/07/08	9/13/08	to	12:00 A.M. 9/23/08	(15" - 9/4 to 9/14) (10" - 9/12 to 9/14)	Yes
10	12/27/08		6.9 MG	12/31/08	5:45 P.M. 12/27/08	to	10:00 P.M. 12/28/08	(2" - 12/26 to 12/27) On Snow Covered/ Frozen Ground	-----
11	3/08/09	2009-03-042	18.2 MG	3/13/09 3/17/09	1:30 P.M. 3/08/09	to	3:00 A.M. 3/13/09	(5" - 3/7 to 3/10) Frozen Ground	Yes
12	4/06/09		4.6 MG	4/10/09	7:00 P.M. 4/06/09	to	7:00 P.M. 4/07/09	(1.8" - 4/2 to 4/5) On Frozen/Snow Covered Ground	-----
13	10/30/09		6.2 MG	11/03/09	4:40 P.M. 10/30/09	to	9:00 P.M. 10/31/09	9.5" October, 2011 (1.7" - 10/29)	Yes
14	6/23/10		4.1 MG	6/28/10	11:30 P.M. 6/23/10	to	2:00 P.M. 6/24/10	(5" - 6/18 to 6/23) (2.7" - 6/23)	Yes
15	4/26/11		9.9 MG	5/03/11	7:45 P.M. 4/26/11	to	1:30 P.M. 4/30/11	7" April, 2011 (5" - 4/17 to 4/27)	Yes
16	5/27/11		7.26 MG	6/02/11	1:15 P.M. 5/27/11	to	2:00 A.M. 5/31/11	(4" - 5/22 to 5/29) (2.75" - 5/25)	Yes
17	6/10/11		4.68 MG	6/10/11 6/14/11	11:50 A.M. 6/10/2011	to	5:00 A.M. 6/11/2011	(4" - 5/22 to 5/29) (2.8" - 6/8 to 6/9)	Yes

\*

\* May 30, 2008 - Griffith cut back to 5.5 MGD Maximum Pumping Capacity due to request from HSD.

Note: The Town of Griffith Pump Station and Equalization Basin was put in service in October, 1997.



**Basin Sizing** - In the original Alternatives Analysis, the Town recommended the total storage capacity be increased by ten (10) million gallons from approximately 4.6 million gallons to 14.6 million gallons total. The EPA responded that they felt the basin expansion should be somewhere between thirteen (13) and eighteen (18) million gallons based on the SSO events of May 12, 2002 and March 8, 2009.

The 5-inches of rain which caused the March 8, 2009 SSO event occurred while the ground was still frozen resulting in flooding throughout the Town of Griffith and unusually high inflow and infiltration. This was a very unusual event.

The Town reviewed the pumping figures, from the Cline Avenue Pump Station to the HSD, for the May 12, 2002 SSO event. From May 11, 2002 to May 15, 2002 the outflow to HSD ranged from 6.10 to 6.98 million gallons per day (MGD). Although this was during a time period that HSD usually allowed Griffith to pump up to 8.0 MGD, this was an event where they had obviously asked the Town to reduce flow to the HSD since they never exceeded 6.98 MGD. If the Town had been able to pump up to 8.0 MGD, the SSO event would have been significantly less.

The Town has prepared cost information for both a 10.0 million gallon basin and a 13.0 million gallon basin. It should be noted that the Town of Griffith and the Town of Highland have held discussions on a joint storage project at the site of Griffith's existing pump station and equalization basin. At this time, since Highland has not pursued this option further with the Town of Griffith, we have not addressed it in any detail.

C. INCREASE CONTRACT CAPACITY WITH THE HAMMOND SANITARY DISTRICT

The Sewage Collection and Treatment Agreement between the Hammond Sanitary District and the Town of Griffith, signed in May of 1994, authorized the Town to convey sewage to the District at a rate of 4.0 MGD. This Agreement was modified in June of 1995 to increase the rate to 5.5 MGD. The Town's Cline Avenue Pump Station has the ability to pump approximately 8.0 MGD to the HSD if all four (4) sanitary pumps are operating. From the startup date of the new pump station until May 30, 2008, the Town of Griffith was allowed to pump up to 8.0 MGD if the HSD was not experiencing flooding. If there was flooding in Hammond, a representative of the HSD would contact the Town of Griffith and ask them to cut back flow.

During 2006 and 2007 there were some very severe rain events that caused significant surcharging of the sanitary sewer lines in Hammond. As a result, the HSD took a hard stance with the customer communities of Griffith, Highland and Whiting and installed devices to throttle the flow from these communities to their contract capacity. They also told the Town of Griffith that their consultant had performed extensive studies of the Hammond sewer system and determined that there was no cost effective method to improve the infrastructure to allow the Town to pump more than their contract capacity.



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After many attempts by the Town to revisit this issue over the last few years, we have finally made some progress. The Town has recently made several contacts with the HSD and their Consultant, AB&H/Donohue. Meetings were held with the HSD and AB&H on November 1, 2012 and March 7, 2013 to discuss infrastructure improvements to be undertaken by HSD that would allow the Town of Griffith to pump more flow. There have also been several phone conversations and email communications regarding this issue.

The HSD infrastructure improvements that will be necessary to take additional flow from the Town of Griffith include:

- CSO storage basin and treatment facility at Indianapolis Blvd. and I-80/94.
- Kennedy Ejector Pump Station and force main modifications.
- Relief sewer from Griffith force main discharge point in Hammond to the Kennedy Ejector Pump Station.
- Relief sewer to Southside Pump Station (Pending acceptance of NPD-016).

The extent of the infrastructure improvements required is dependent on the acceptance of the IDEM, NPD-016 Non-Rule Policy document for CSO Treatment Facilities. This policy requires 100% capture of the 1-yr-1-hr storm and treatment of the 10-yr-1-hr storm (30 minute retention, skimming of floatables and disinfection). If EPA and IDEM do not accept this policy, the cost of the required facilities could be significantly higher.

As a result of the meetings with the HSD and other communications, the HSD has prepared rough estimates of the cost associated with the following two options based on the use of the NPD-016 Non-Rule Policy:

1. Increase Pumping Capacity from 5.5 MGD to 8.0 MGD. Since the Town of Griffith still had SSO events when they were allowed to pump up to 8.0 MGD in the past, this alternative would also require expansion of the existing Town of Griffith equalization basin. The estimated size of the basin expansion would be 5.0 million gallons.
2. Increase Pumping Capacity from 5.5 MGD to 12.0 MGD. The Town has estimated that no basin expansion would be necessary if they were allowed to pump up to 12.0 MGD. A new, larger force main and new sanitary sewage pumps would need to be installed to pump at this higher rate. Other pump station modifications may also be necessary.

#### D. CONSTRUCT A WASTEWATER TREATMENT PLANT

The Town of Griffith currently sends all of their wastewater to the HSD Wastewater Treatment Plant. A Sewage Collection and Treatment Agreement was entered into with the HSD in May of 1994. This agreement is effective until December 31, 2018; however, the customer communities must give written notice of their intent to extend the contract for another 25 years by December 31, 2015.



The original Alternatives Analysis included an in-depth review of the Town of Griffith constructing their own Wastewater Treatment Plant. This option would resolve all of the SSO issues discussed above; however, the Town realizes that there are many obstacles to overcome in order for this option to become a reality, including the anti-degradation process, pollutant discharge limitations, restrictive mercury effluent limitation and project cost considerations.

## **COST ESTIMATE SUMMARY**

Estimated costs for the various SSO minimization alternatives discussed above are summarized below:

<u>Alternative</u>	<u>Estimated Cost</u>
1. 10.0 Million Gallon Basin Addition	\$15,800,000 *
2. 13.0 Million Gallon Basin Addition	\$19,800,000 *
3. Hybrid – 5.0 MG Basin & 8.0 MGD to HSD	\$16,500,000 *
4. Pump 12.0 MGD to HSD	\$14,800,000 *
5. New Wastewater Treatment Plant	\$47,000,000 to \$65,000,000

\* Costs subject to change by HSD – see Table 2

Table 2 gives further detail on the costs shown above for Alternatives 1 through 4. The estimated costs are rough estimates at this time. A more detailed cost estimate will be prepared once the recommended alternative is more fully defined.

## **RECOMMENDED ALTERNATIVE**

As discussed briefly in the notes for Table 2, there are many unknowns associated with the costs provided by HSD. One of the key issues is the use of the IDEM, NPD-016 Non-Rule Policy for CSO Treatment Facilities. The other key issue is the charge HSD will assess for increasing the contract capacity above the current limit. They also indicated that they may decide to assess a "one time charge" to the Town for the hardship of taking additional flow; however, they did not provide any figures. The Town of Griffith will need additional information regarding these issues before they can make a decision on the recommended alternative.

The application of the NPD-016 Non-Rule Policy requires a response from EPA and IDEM regarding acceptance of this policy. The HSD has indicated that the costs will go up substantially for the Town, especially for options 3 and 4 if this policy is not accepted. The Town of Griffith is requesting that EPA and IDEM converse on this issue and respond to the Town of Griffith so that the cost comparison of the various alternatives can be completed. It is critical that the Town of Griffith review all possible options for the most cost-effective and acceptable solution.

It should be noted that if Alternative 3 or Alternative 4 is determined to be the most cost-effective solution, the implementation schedule for these alternatives would be subject to the approval of the HSD Long-Term Control Plan. The Town has not received any type of detailed information on their proposed schedule; however, the HSD has expressed cooperation in at least attempting to expedite the infrastructure improvements that would be necessary for the Town of Griffith to resolve their SSO issues.



**TABLE 2**

Cost Information for SSO Minimization Alternatives

Item	Griffith Flow Rate to HSD and Basin Size			
	5.5 MGD	5.5 MGD	8.0 MGD	12.0 MGD
	10.0 MG Basin	13.0 MG Basin	5.0 MG Basin	No Basin Req'd
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
<b>HSD Infrastructure Improvements</b>				
Kennedy Ejector Pumping & Force Main	\$688,000	\$688,000	\$1,007,000	\$1,522,000
CSO Storage/Treatment (Based on NPD-016)	\$1,615,000	\$1,615,000	\$1,615,000	\$1,615,000
Relief Sewer to Kennedy Ejector Pump Station	\$0	\$0	\$5,600,000	\$5,600,000
Relief Sewer to Southside Pump Station (Pending)	\$0	\$0	Unknown	Unknown
HSD Capacity Increase Surcharge (Estimated)	\$0	\$0	\$1,000,000	\$2,000,000
<b>Town of Griffith Improvements</b>				
Flow Equalization Basin (Town of Griffith)	\$13,500,000	\$17,500,000	\$7,200,000	\$0
New Force Main & Pumps to HSD	\$0	\$0	\$0	\$4,000,000
TOTAL =	\$15,803,000	\$19,803,000	\$16,422,000	\$14,737,000

Notes

- \* HSD Costs for storage could increase substantially if IDEM & EPA do not buy into NPD-016 Policy.
- \* All HSD cost figures received from AB&H/Donohue; Griffith cost figures from LFA.
- \* AB&H cost figures taken from PowerPoint Presentation at 3/7/13 meeting w/HSD and customer communities. Costs are subject to change.
- \* AB&H still reviewing need for relief sewer to Southside Pump Station, depending on acceptance of NPD-016 non-rule policy.
- \* HSD has not passed along figures yet for the one time capacity increase surcharge. Figures shown are estimated based on past conversations.